City of

Salina

DEPARTMENT OF PUBLIC WORKS

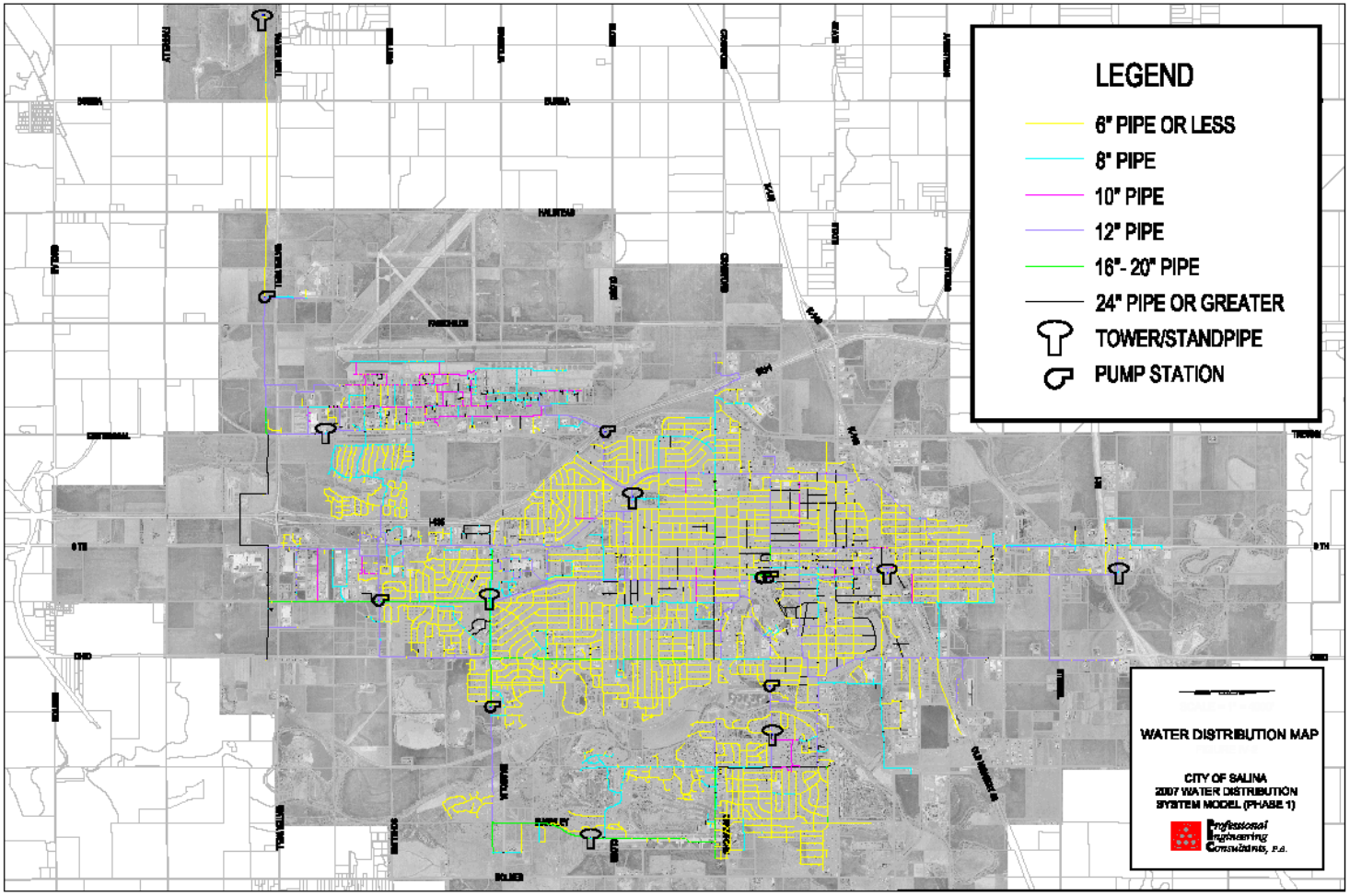
2007 Water Distribution System Model – Phase 1

Professional Engineering Consultants, P.A.

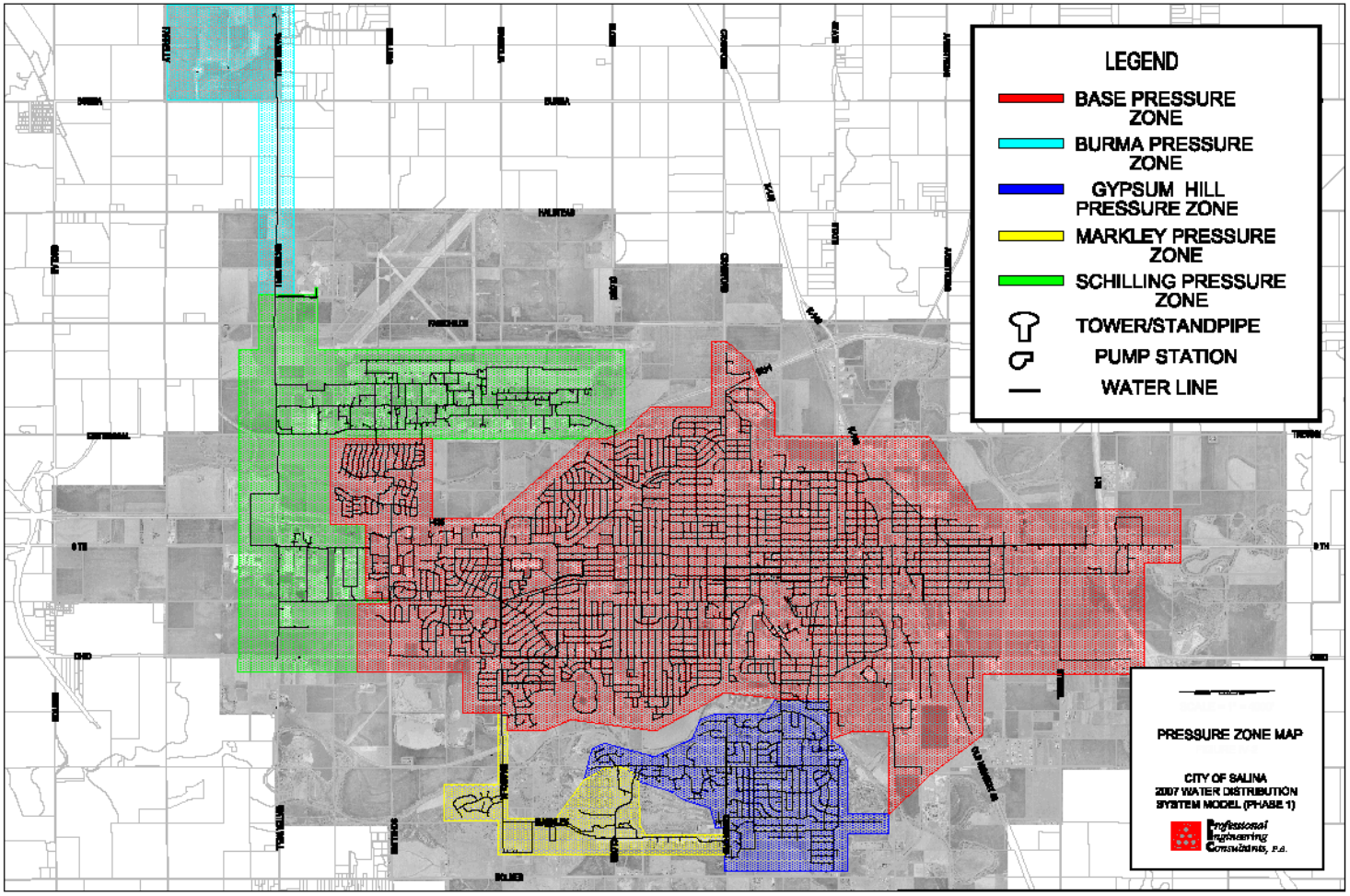
Purpose

- Phase 1 – Define Existing System
  - Create and calibrate water model
  - Map water lines
  - Establish condition of system
  - Predict water demands
- Phase 2 – Water System CIP
  - Identify corrective actions
  - Costs
  - Schedule

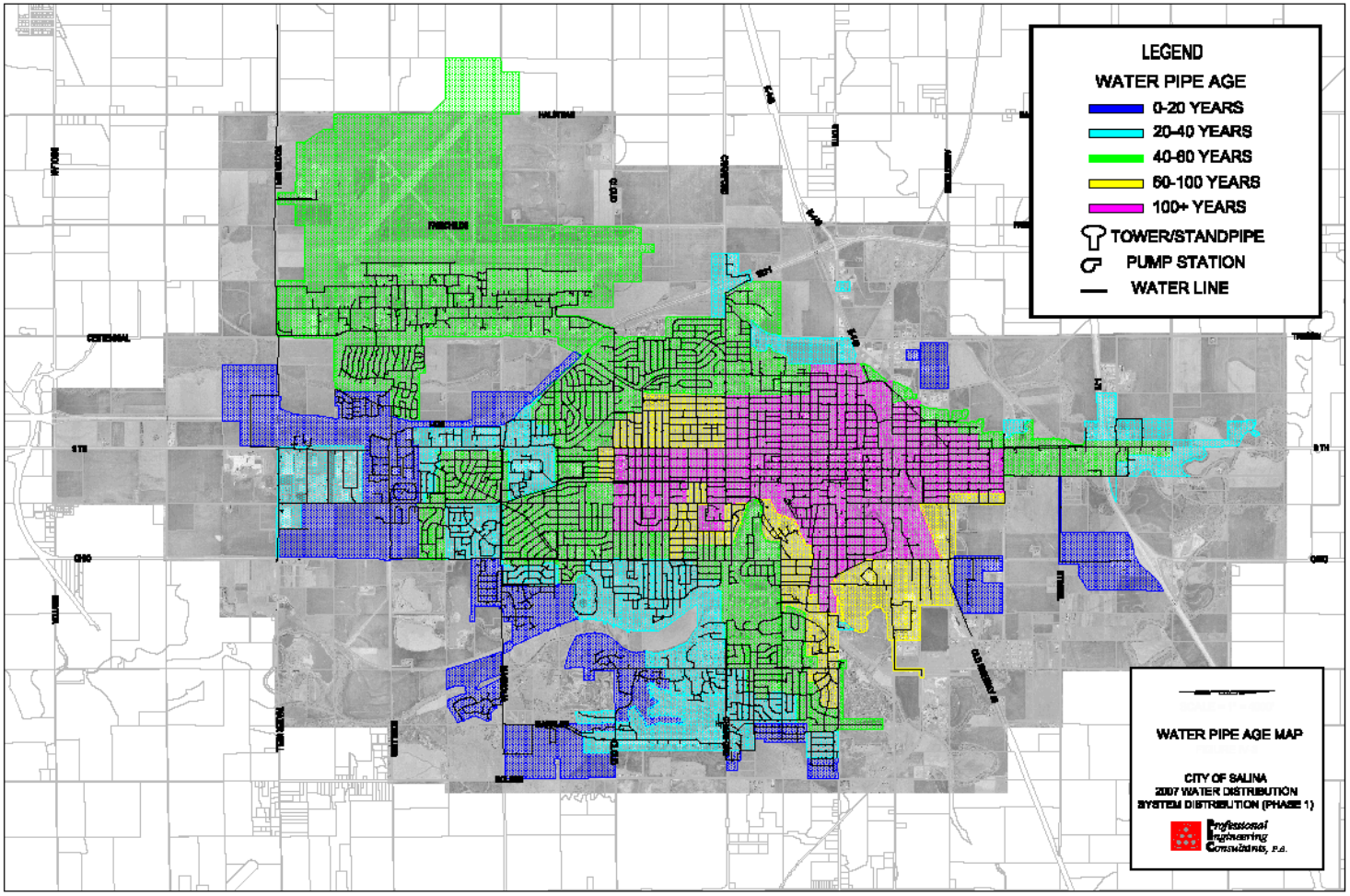
Water Distribution System



Pressure Zones



Water Pipe Age

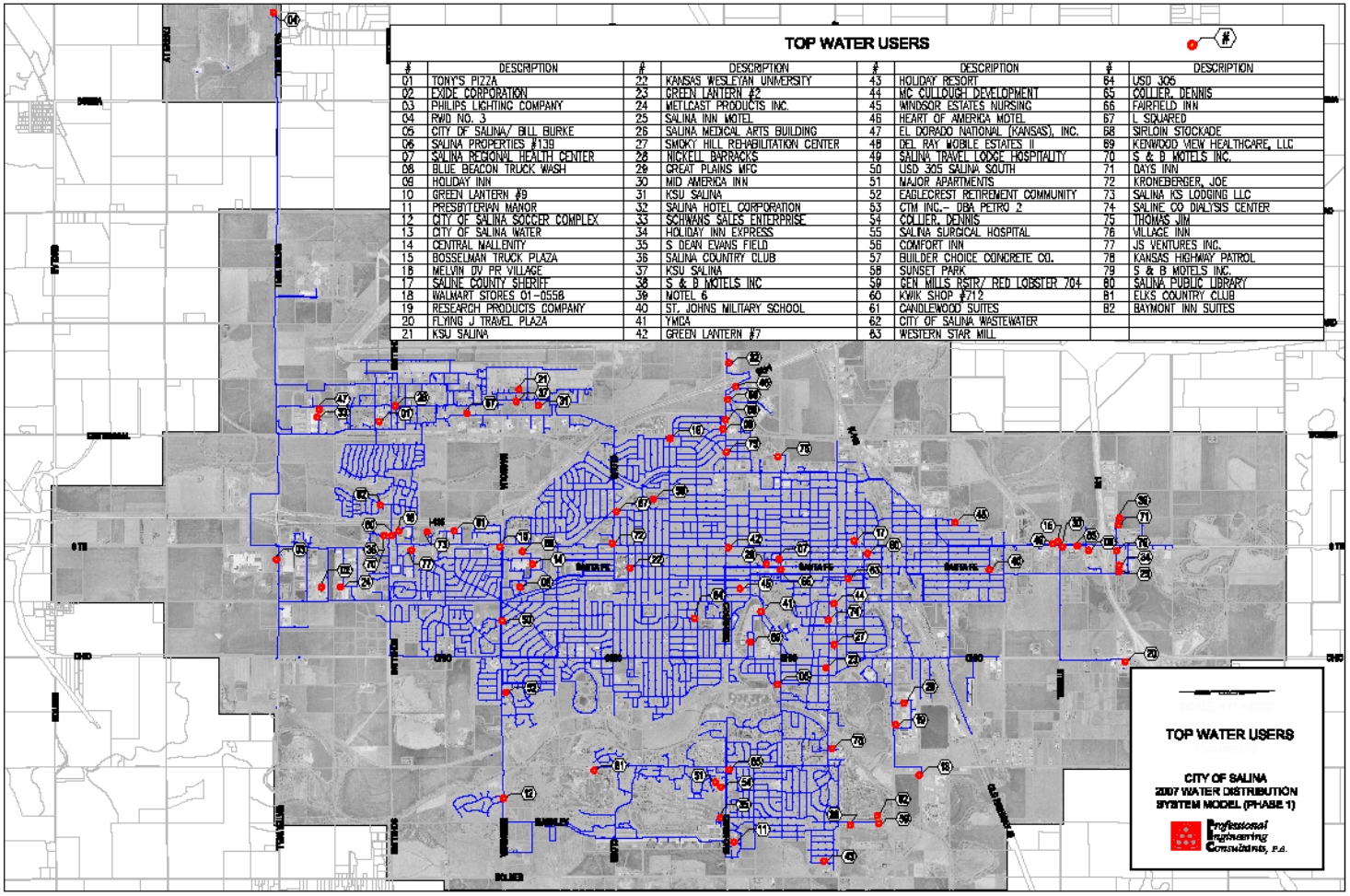


Projections

HISTORICAL WATER USAGE
2004-2006
CITY OF SALINA

Year	Average Day Flow (MGD)	Maximum Day Flow (MGD)	Max Day Flow Date
2004	7.042	11.990	08/24/2004
2005	7.328	11.879	08/03/2005
2006	7.174	12.863	06/09/2006

Projections



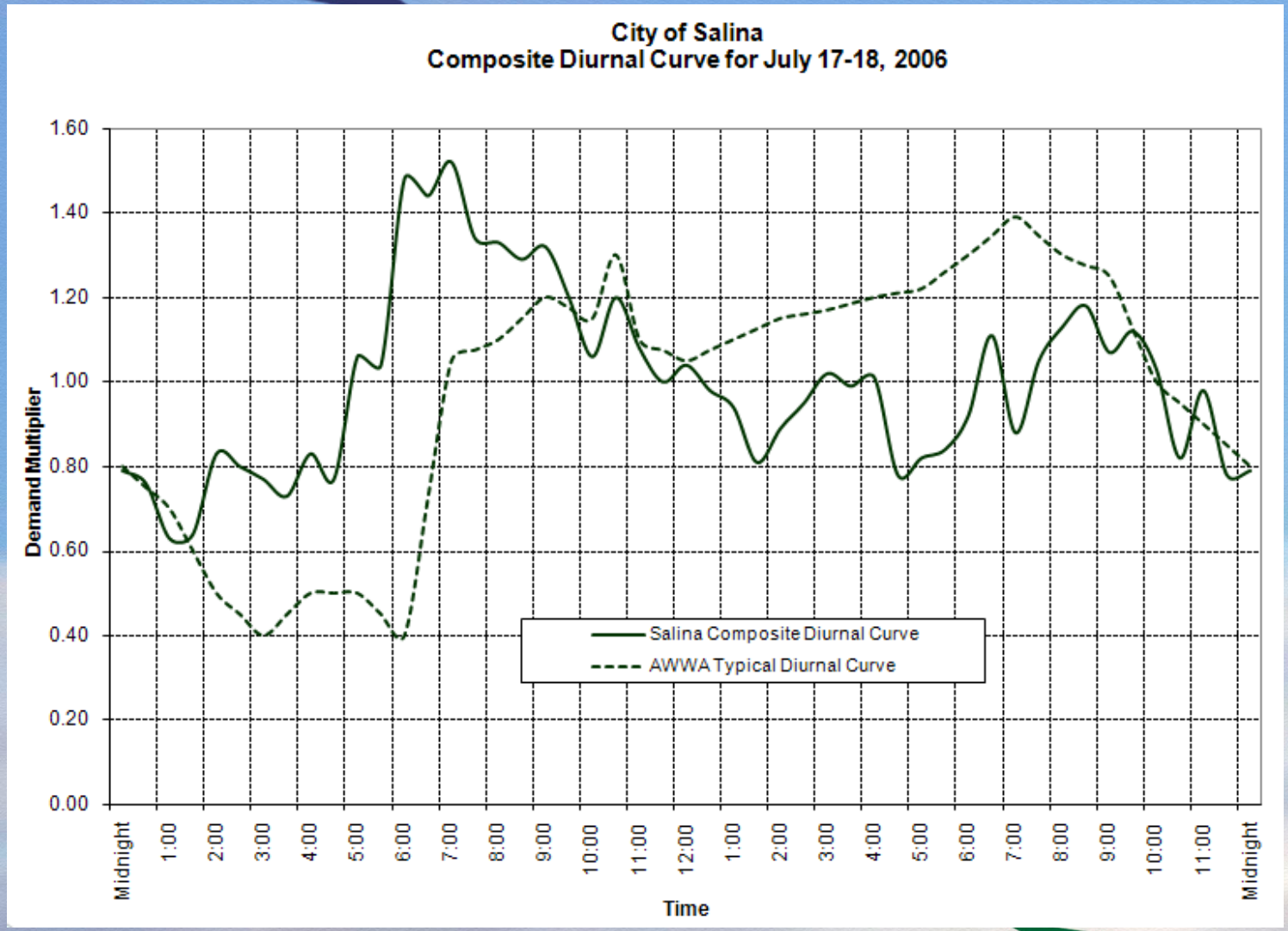
#	DESCRIPTION	#	DESCRIPTION	#	DESCRIPTION	#	DESCRIPTION
01	TONY'S PIZZA	22	KANSAS WESLEYAN UNIVERSITY	43	HOLIDAY RESORT	64	USD 305
02	EXIDE CORPORATION	23	GREEN LANTERN #2	44	MC CULLOUGH DEVELOPMENT	65	COLLIER, DENNIS
03	PHILIPS LIGHTING COMPANY	24	METLCAST PRODUCTS INC.	45	WINDSOR ESTATES NURSING	66	FAIRFIELD INN
04	RWD NO. 3	25	SALINA INN MOTEL	46	HEART OF AMERICA MOTEL	67	L SQUARED
05	CITY OF SALINA/ BILL BURKE	26	SALINA MEDICAL ARTS BUILDING	47	EL DORADO NATIONAL (KANSAS), INC.	68	SIRLOIN STOCKADE
06	SALINA PROPERTIES #139	27	SMOKY HILL REHABILITATION CENTER	48	DEL RAY MOBILE ESTATES II	69	KENWOOD VIEW HEALTHCARE, LLC
07	SALINA REGIONAL HEALTH CENTER	28	NICKELL BARRACKS	49	SALINA TRAVEL LODGE HOSPITALITY	70	S & B MOTELS INC.
08	BLUE BEACON TRUCK WASH	29	GREAT PLAINS MFC	50	USD 305 SALINA SOUTH	71	DAYS INN
09	HOLIDAY INN	30	MID AMERICA INN	51	MAJOR APARTMENTS	72	KRONEBERGER, JOE
10	GREEN LANTERN #9	31	KSU SALINA	52	EAGLECREST RETIREMENT COMMUNITY	73	SALINA KS LODGING LLC
11	PRESBYTERIAN MANOR	32	SALINA HOTEL CORPORATION	53	CTM INC.- DBA PETRO 2	74	SALINE CO DIALYSIS CENTER
12	CITY OF SALINA SOCCER COMPLEX	33	SCHWANS SALES ENTERPRISE	54	COLLIER, DENNIS	75	THOMAS JIM
13	CITY OF SALINA WATER	34	HOLIDAY INN EXPRESS	55	SALINA SURGICAL HOSPITAL	76	VILLAGE INN
14	CENTRAL MALLENITY	35	S DEAN EVANS FIELD	56	COMFORT INN	77	JS VENTURES INC.
15	BOSSELMAN TRUCK PLAZA	36	SALINA COUNTRY CLUB	57	BUILDER CHOICE CONCRETE CO.	78	KANSAS HIGHWAY PATROL
16	MELVIN DV PR VILLAGE	37	KSU SALINA	58	SUNSET PARK	79	S & B MOTELS INC.
17	SALINE COUNTY SHERIFF	38	S & B MOTELS INC	59	GEN MILLS RSTR/ RED LOBSTER 704	80	SALINA PUBLIC LIBRARY
18	WALMART STORES 01-0556	39	MOTEL 6	60	KWIK SHOP #712	81	ELKS COUNTRY CLUB
19	RESEARCH PRODUCTS COMPANY	40	ST. JOHNS MILITARY SCHOOL	61	CANDLEWOOD SUITES	82	BAYMONT INN SUITES
20	FLYING J TRAVEL PLAZA	41	YMCA	62	CITY OF SALINA WASTEWATER		
21	KSU SALINA	42	GREEN LANTERN #7	63	WESTERN STAR MILL		

Projections

PROJECTED AVERAGE DAY WATER DEMANDS

Year	Projected Population	City Water Demand (MGD)	Wholesale Water Demand (MGD)	Total Water Demand (MGD)
2005	45,956	7.10	0.077	7.18
2010	47,500	7.32	0.079	7.40
2015	48,790	7.51	0.080	7.59
2020	50,800	7.82	0.082	7.90
2025	51,360	7.91	0.083	7.99
2030	52,650	8.11	0.085	8.20

Projections

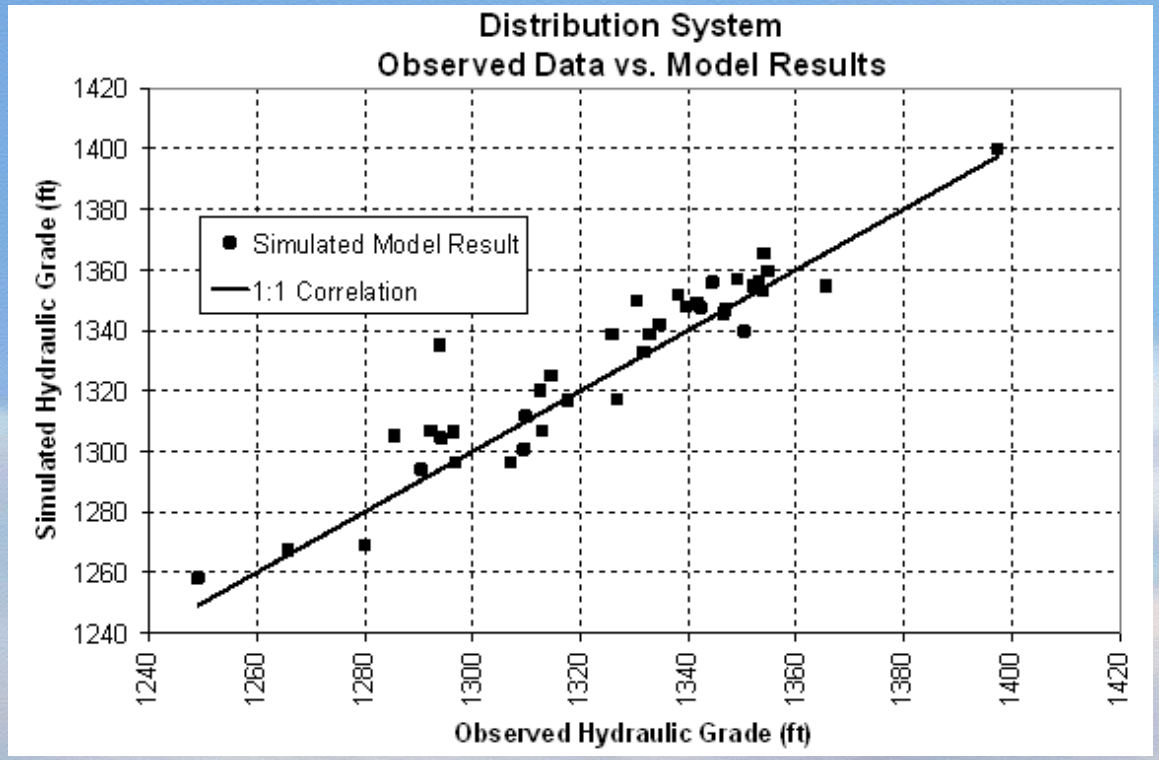


Water Model

- WaterGems
  - Identify all pipes
  - Points of connection
  - Valves
  - Fire hydrants
  - Pumps
  - Towers

C-Values – Condition of Pipe

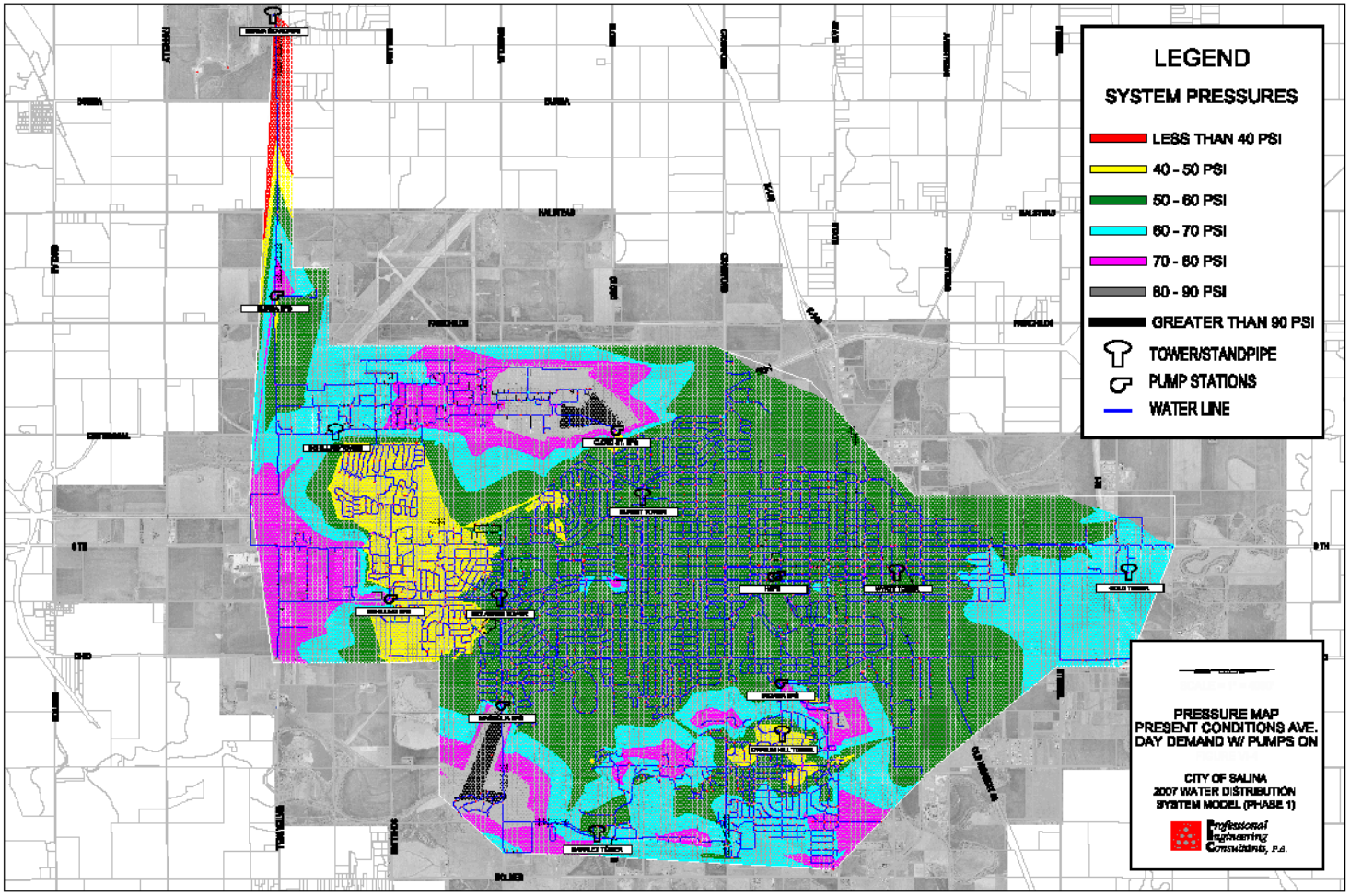
- Correlation of Model



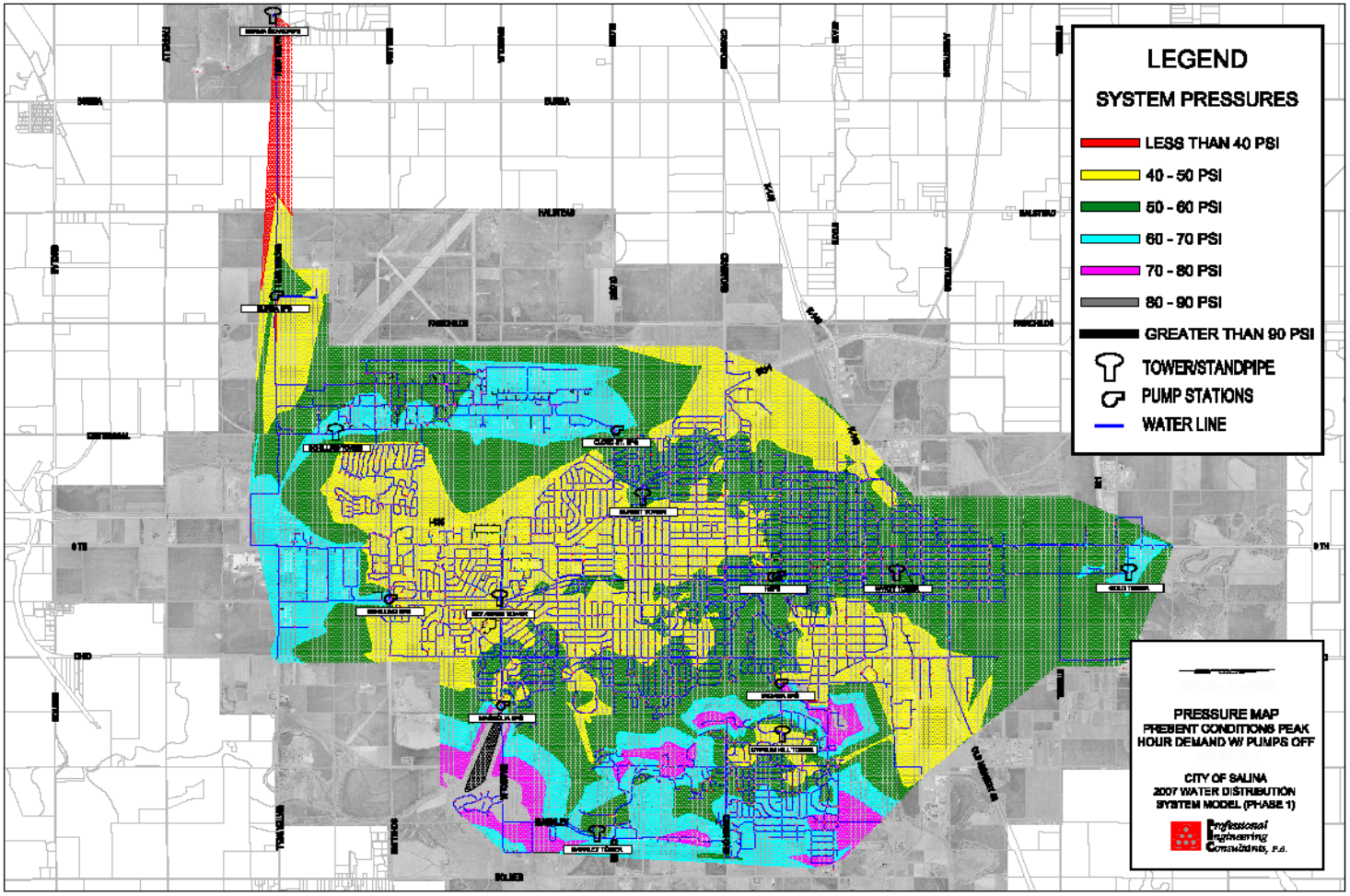
C-Values – Condition of Pipe

- City water lines have very low C-values

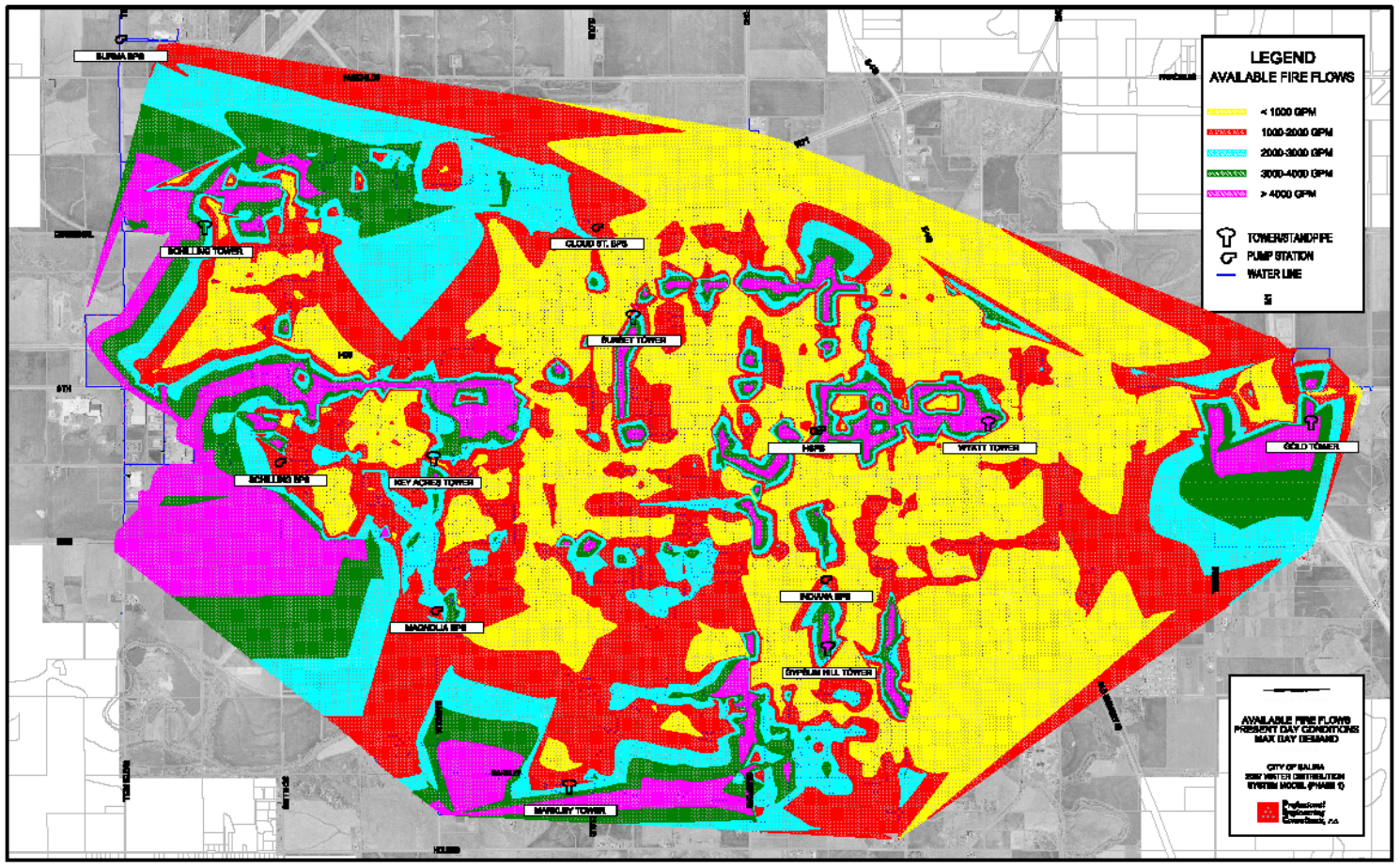
Pressure with Pumps On at Present Average Day Demand



Pressure with Pumps Off at Present Peak Hour Demand



Available Fire Flows- Present Day Condition



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Questions?

Thank You!

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